



**SECTION 11 71 01**  
**MEDICAL WASHING AND STERILIZING EQUIPMENT**

**PART 1 - GENERAL**

**1.1 DESCRIPTIONS**

- A. This section specifies Medical Reprocessing and Sterilization Equipment including washer disinfectors, cart washers, ultrasonic cleaners, automated endoscope re-processors, steam sterilizers, ethylene oxide (EtO) sterilizer/aerator combination units, ethylene oxide (EtO) abators, plasma sterilizers, ethylene oxide (EtO) monitoring stations, liquid chemical sterilizers, drying cabinets, detergent dispensing units, water treatment systems, steam guns, and endoscope pre-processing sinks.
- B. Contractor shall prepare required permit application(s) and obtain a "Certificate of Operation" for all ethylene oxide sterilization/aerator equipment, abators, monitoring systems, and other ethylene oxide related components as required by the New York City Department of Environmental Protection (NYCDEP).

**1.2 DEFINITIONS**

- A. Ultrasonic Cleaner: A mechanical system that uses sound waves, water and detergent to loosen soil from instruments. Both countertop and floor units are available.
- B. Washer/Disinfectant: An automated washing unit that uses high-temperature water and detergent to clean and high-level disinfect instruments and trays.
  - 1. Cube Model - Single chamber washer/disinfectant.
  - 2. Tunnel Model - Multiple chamber washer/disinfectant.
- C. Cart Washer: An automated washing unit that uses high-temperature water and detergent to clean and high-level disinfect carts and equipment.
- D. Endoscope Drying Cabinet: Freestanding cabinet used to dry endoscopes with forced, filtered air within the cabinet, as well as through the channels of the scopes.
- E. Equipment Drying Cabinet: Freestanding cabinet used to dry equipment with forced, filtered air and variable temperature settings. There are single door and pass-thru units available.
- F. Automated Endoscopic Re-Processor (AER): Automated washing unit that uses water and EPA-approved high level disinfectants to clean and high level disinfect immersible, flexible endoscopes.



- G. Steam Sterilizer: A machine used to sterilize instruments and equipment by subjecting them to high-pressure steam up to 135 degrees C (275 degrees F). Sterilizers are available in both cart-loading and floor-loading models. They can be either freestanding or recessed, with single or double doors (pass-thru). Steam sterilizers are also known as autoclaves.
- H. Ethylene-Oxide (EtO) Sterilizer/Aerator Combination: A machine that combines the sterilization and aeration process into one unit. Ethylene Oxide gas is used to sterilize heat-sensitive instruments and equipment by subjecting them to a temperature of up to 54 degrees C (130 degrees F), and an aeration cycle immediately follows the sterilization cycle. ETO sterilizers can be freestanding or recessed, with single doors. A dedicated exhaust system is required for Ethylene Oxide.
- I. Ethylene Oxide (EtO) Disposal System (Abator): A machine used as a pollution-control device, that converts ethylene oxide gas exhausted from sterilizer/aerator units to CO<sub>2</sub> and water vapor through a heated catalytic process.
- J. Ethylene Oxide (EtO) Monitoring Station: A continuous monitoring device (Single point or multi-point system) used to detect Ethylene Oxide leakage into the room.
- K. Gas Plasma Sterilizer: A machine that uses hydrogen peroxide gas plasma to sterilize heat-sensitive instruments and equipment. These sterilizers are available as either floor, cart, or counter-mounted.
- L. Liquid Chemical Sterilizer: A machine that uses a low-temperature liquid chemical sterilant to process heat-sensitive rigid and flexible endoscopes.
- M. Water Treatment System: A mechanical system for use with steam sterilizers, washer/disinfectors and cart washers, that decreases contaminants in the municipal water to reduce boiler scaling and instrument spotting.
- N. Detergent Dispensing System: A mechanical system that dispenses measured doses of detergent or other chemicals directly to washer disinfectors and cart washers.
- O. Steam Gun: Refer to Section 23 22 13, STEAM AND CONDENSATE HEATING PIPING.



P. Endoscope Pre-Processing Sink: Refer to Section 22 40 00, PLUMBING FIXTURES.

### 1.3 RELATED WORK

- A. Section 22 11 00, FACILITY WATER DISTRIBUTION and Section 22 13 00, FACILITY SANITARY SEWERAGE: Plumbing Connections.
- B. Section 22 40 00, PLUMBING FIXTURES.
- C. **Section 22 67 19.16, REVERSE-OSMOSIS WATER EQUIPMENT, RO system requirements.**
- D. Section 23 05 11, COMMON WORK RESULTS FOR HVAC.
- E. Section 23 22 13, STEAM AND CONDENSATE HEATING PIPING: Steam Connections.
- F. Section 23 09 23, DIRECT-DIGITAL CONTROL SYSTEM FOR HVAC: Remote monitoring of the Steam Sterilizers and EtO Monitoring system.
- G. Section 26 05 11, REQUIREMENTS FOR ELECTRICAL INSTALLATIONS: Electrical Connections.

### 1.4 PERFORMANCE REQUIREMENTS

- A. Equipment shall have built-in monitoring for timed cycles, and control devices for proper temperature and pressure. Equipment shall have a printer, either integrated or remote, for recording cycle time, temperature, and pressure.
- B. Manufacturer safeguards must be provided with the equipment to protect the operator from harm during normal operation of the equipment.

### 1.5 QUALITY CONTROL

- A. Refer to Section 23 05 11, COMMON WORK RESULTS FOR HVAC, Article 1.3 Quality Assurance, Paragraph D "Products Criteria".
- B. Mechanical, electrical, and associated systems shall be safe, reliable, efficient, durable, easily and safely operable, maintainable, and accessible.
- C. Standard Products: Material and equipment shall be the standard products of the selected manufacturer, and they should be regularly engaged in the manufacture of such products for at least three (3) years. The design, model and size of each item shall have been in satisfactory and efficient operation on at least three installations for approximately three (3) years. However, digital electronics devices, software and systems such as controls, instruments, computer work stations, shall be the current generation of technology and basic



design that has a proven satisfactory service record of at least three (3) years.

- D. All items furnished shall be free from defects that would adversely affect the performance, maintainability and appearance of individual components and overall assembly.
- E. Multiple Units: When two or more units of materials or equipment of the same type or class are required, these units shall be products of one manufacturer.
- F. Nameplates: Nameplate bearing manufacturer's name or identifiable trademark shall be securely affixed in a conspicuous place on equipment, or name or trademark cast integrally with equipment, stamped or otherwise permanently marked on each item of equipment.
- G. Installer Qualifications: Installer is authorized representative of sterilizer manufacturer and employs factory-trained personnel to install sterilizers. Installer is licensed as may be necessary by regulatory organizations.
- H. Steam Sterilizers: Comply with the most current version of ANSI/AAMI ST8.
- I. Ethylene-Oxide Sterilizers: Comply with the most current version of ANSI/AAMI ST24.

#### **1.6 SUBMITTALS**

- A. Submit in accordance with specification Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Manufacturer's Literature and Data: Include the following:
  - 1. Illustrations and descriptions of medical reprocessing equipment.
  - 2. Optional auxiliary equipment and controls.
  - 3. Catalog or model numbers for each component.
  - 4. Utility requirements.
- C. Shop Drawings: Show details of fabrication, installation, adjoining construction, coordination with mechanical and electrical work, anchorage, and other work required for complete installation.
- D. Field Test Reports: Provide certification reports from accredited service technicians or installers.
- E. Operating Instructions: Comply with requirements in specification Section 01 00 00, GENERAL REQUIREMENTS.
- F. Furnish a copy of required "Certificate of Operation" from the NYCDEP for all ethylene oxide sterilization/aerator equipment, abators,



monitoring systems, and other ethylene oxide related components; submit to the Resident Engineer.

**1.7 APPLICABLE PUBLICATIONS**

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- B. American National Standards Institute/Association for the Advancement of Medical Instrumentation (ANSI/AAMI):  
ST8-2008.....Hospital Steam Sterilizer, 3<sup>rd</sup> edition  
ST24-1999 (R2009).....Automatic, General-Purpose Ethylene Oxide Sterilizers and Ethylene Oxide Sterilant Sources Intended for Use in Health Care Facilities
- C. National Association of Architectural Metal Manufacturers (NAAMM):  
AMP 500-06.....Metal Finishes Manual

**1.8 WARRANTY**

Comply with FAR clause 52.246-21 in all areas except for warranty period, which shall be two (2) years for all equipment.

**1.9 GUARANTEE PERIOD SERVICES**

- A. Engage factory-trained authorized manufacturers' representatives to perform maintenance service on equipment during guarantee period.
  - 1. Maintenance Service:
    - a. Inspection of equipment at regularly scheduled intervals as defined by the manufacturer.
    - b. Testing, cleaning, adjusting, repairing, and furnishing and installing replacement components as required to maintain equipment in reliable working condition.
  - 2. Maintenance service does not include cleaning, adjusting, repairing, furnishing and installing replacement components required because of improper use.

**PART 2 - PRODUCTS**

**2.0 INDEX**

- A. A1195 Counter, Cleanup, With 2 or 3 Sinks.
- B. A5135 Shelf, Utility W/ Mop/Broom Holders, SS, Surf Mntd.
- C. A5210 Bracket, Television, Wall Mounted, w/Adjust Arm.
- D. C0051M Stainless Steel Pegboard.



- E. E0918M Cabinet, Endoscope Drying.
- F. K1550 Brewer, Coffee, Auto, Elect, 3 Burner, Side/Side.
- G. ~~I-2000 Purification System, Water.~~
- H. ~~M1803M Mount, Wall, FP Monit/Kbd/CPU.~~
- I. M1803M1 Mount, Ceiling, FP Monit/Kbd/CPU.
- J. M2020 Cabinet, Storage, Safety, Built-In, Vented.
- K. S0395 Loading Car and Transfer Carriage, Large Chamber.
- L. S0530 Sterilizer, Stm, VAC, 1DO, RCSD 1WLL.
- M. S0960 Washer/Disinfector, STM, 2DO, RCSD 1WLL.
- N. S2635 Cleaner, Ultrasonic, SNGL Chamber, CAB, F/S.
- O. S2640 Cleaner, Ultrasonic, Console, DBL CHMBR, CAB, F/S.
- P. S3185 Washer, Cart and Utensil, 2 DO, PIT MNTD, RCSD 2 WLL.
- Q. S5500M Automated Endoscope Reprocessor.
- R. S5500M1 Sterilizer/Aerator, EtO Gas.
- S. S5500M2 Ultrasound Probe Reprocessor.
- T. S5500M3 Ultrasound Probe Disinfector.
- U. U1000 Abator, Ethylene Oxide.
- V. U1002 Pass-Through Assembly.

#### **2.1 A1195 COUNTER, CLEANUP, WITH 3 SINKS**

- A. Materials: Countertop shall be constructed of 300 series stainless steel. All welded construction, ground and blended to match finish. Unit shall be constructed of no thinner than No 14 gauge stainless steel on the top and no less than 18 gauge stainless steel in the basins. Front and 2 sides shall have an apron not less than 152 mm (6 inches) high of not less than 16 gauge stainless steel with corners welded, ground and blended to match finish.
- B. Work Surface: Unit shall have three (3) basins not more than 304.8 mm (12 inches) deep and which are approximately 609.6 mm (24 inches) wide by 431.8 mm (17 inches) long. Basins shall be adjacent to one another with approximately 654.05 mm (25.75 inches) from center of drain to center of drain. Counter has work shelves on either side of outermost basin which slope to basins. Shelves shall be not less than 565.15 mm (22.25 inches) wide by 781.05 mm (30.75 inches) long.
- C. Fixtures: Counter has not less than two (2) goose neck faucets. Faucets shall be designed to prevent from pouring directly into basin drain. Each faucet has a pre-rinse with a spray head which can provide continuous water flow and has a stainless steel braided hose with heavy



duty chrome plated spring. Pre-rinse is free standing and does not require building support for stability. Counter has integral air gun with standard 5 tip and hose. Counter has a computer monitor/keyboard/mouse mount on the far left-hand side attached to the backsplash. Mount is an articulating arm type that will not drift or sag and can support up to a 533.4 mm (21 inch) monitor.

- D. Frame: Counter is freestanding and mounted on four stainless steel legs with enclosed set screw sockets and adjustable feet. Legs are braced to ensure stability. Counter is height adjustable through a cylinder and linear guide unit. Maximum lift load is not less than 1.5 N per cylinder with a lift length of not less than 300 mm (11.82 inches). Lift speed with electric motor is not less than 30 mm/s (1.18 inches/s). Lift motor is operated by a control pad located at the counter with not less than four (4) pre-set memory. Motor is concealed and protected and attached to counter. Counter feet have rubber adjustable levelers and floor anchor plates.
- E. Soap Dispensing: Provide a remotely located, automatic soap concentrate dispensing station to provide liquid concentrate prewash, wash, or sterilant to each appropriate basin.

## **2.2 COUNTER, CLEANUP, WITH 2 SINKS**

- A. Materials: Countertop shall be constructed of 300 series stainless steel. All welded construction, ground and blended to match finish. Unit shall be constructed of no thinner than No 14 gauge stainless steel on the top and no less than 18 gauge stainless steel in the basins. Front, back and 2 sides shall have an apron not less than 6 inches high of not less than 16 gauge stainless steel with corners welded, ground and blended to match finish.
- B. Work Surface: Unit shall have two (2) basins not more than 304.8 mm (12 inches) deep and which are approximately 609.6 mm (24 inches) wide by 431.8 mm (17 inches) long. Basins shall be adjacent to one another with approximately 654.05 mm (25.75 inches) from center of drain to center of drain. Counter shall extend beyond each basin to provide work surfaces on either side of outermost basin and slope to basins. Work surface area shall be not less than 565.15 mm (22.25 inches) wide by 781.05 mm (30.75 inches) long; with marine edges.
- C. Fixtures: Counter has two (2) goose neck faucets. Faucets shall be designed to prevent from pouring directly into basin drain. Each



faucet has a pre-rinse with a spray head which can provide continuous water flow and has a stainless steel braided hose with heavy duty chrome plated spring. Pre-rinse is free standing and does not require building support for stability. Counter has integral air gun with standard 5 tip and hose. Counter has a computer monitor/keyboard/mouse mount on the far left-hand side attached to the backsplash. Mount is an articulating arm type that will not drift or sag and can support up to a 533.4 mm (21 inch) monitor.

- D. Frame: Counter is freestanding and mounted on four stainless steel legs with enclosed set screw sockets and adjustable feet. Legs are braced to ensure stability. Fixed shelf below with notch to accommodate plumbing box for service connections in freestanding locations. Counter shall have floor anchor plates.
- E. Soap Dispensing: Provide automatic soap concentrate dispensing station to provide liquid concentrate prewash, wash, or sterilant to each appropriate basin.

### **2.3 A5135 SHELF, UTILITY W/ MOP/BROOM HOLDERS, SS, SURF MNTD**

- A. Stainless steel with grip jaw cam mechanism securing five (5) mop or broom handles. Also includes hooks and storage shelf.

### **2.4 A5210 BRACKET, TELEVISION, WALL MOUNTED, W/ADJUST ARM**

- A. The wall mounted bracket shall be mounted where indicated on the construction drawings. The mount shall be coordinated with the television size at location.
  1. Articulating arm mount style.
  2. Universal design shall be width and height adjustable to fit VESA standard mounting hole patterns.
  3. Tilt range from positive 15 degrees to negative 5 degrees.
  4. Swivel range of 90 degrees.
  5. Constructed of a corrosive resistant materials with a powder coat black finish.
  6. Integrated cable management.
  7. Tamper-resistant hardware.
  8. Mount shall be capable of supporting not less than 41.0 kg (90 lbs).

### **2.5 C0051M STAINLESS STEEL PEGBOARD**

- A. Characteristics:
  1. Stainless Steel Construction.
  2. 2438 mm (96 inches) wide by 1057 mm (42 inches) tall.



3. 2,937 holes for pegs measuring 6 mm (1/4 inch in diameter spaced 25 mm (1 inch) on center.
4. 38 kg (85 lbs) weight.
5. Attaches to wall with at least four (4) stainless steel mounting clips.
6. Screws, anchors and wall must adequately support not less than 227 kg (500 lbs).

#### **2.6 E0918M CABINET, ENDOSCOPE DRYING**

- A. Chamber:
  1. Interior: Painted steel.
  2. Capacity: Up to 8 Endoscopes.
- B. Doors:
  1. Quantity: Single.
  2. Operation: Manual.
  3. Configuration: Side hinged.
- C. Loading: Manual.
- D. Heat Source: Electric:
  1. Cabinet Temperature: 65 to 70 degrees C (149 to 158 degrees F).
  2. Standard Drying Time: 0 - 120 minutes.
- E. Cabinet Filtration: HEPA filtered air through chamber and internal endoscope channels.
- F. Air Flow Monitoring: Constant.
- G. Electrical Requirements: 120V.

#### **2.7 K1550 BREWER, COFFEE, AUTO, ELECT, 3 BURNER**

- A. 12 Cup Automatic Coffee Brewer with (3) three lower burners.
- B. Capacity: Brews 14.8 liters/hour (3.9 gallons/hour).
- C. All Stainless Construction.
- D. Hot water faucet.
- E. Water Supply: Water plumbed with back-up pour over access.
- F. Inline Quick Connect Water Filter:
  1. Capacity: approximately 345 cups of coffee.
  2. Particle reduction to 0.2 microns.
- G. Electrical Requirement: 120 volt with line and plug attached.

#### **~~2.8 L2000 PURIFICATION SYSTEM, WATER~~**

- A. ~~Configuration: Free Standing.~~
- B. ~~Water Treatment Process:~~
  1. ~~Pre Filtration.~~



2. ~~Recirculation.~~
  3. ~~Deionization.~~
  4. ~~Final Filtration.~~
  5. ~~Integral Graphic Screen.~~
  - C. ~~Average Output: 250 liters (66 gallons) per day.~~
  - D. ~~Electrical Requirements: 120V.~~
- 2.9 ~~M1803M MOUNT, WALL, FP MONIT/KBD/CPU~~
- A. ~~Configuration: Wall Mounted.~~
  - B. ~~Articulating Arm:~~
    1. ~~Aluminum alloy with plastic cover.~~
    2. ~~Color: White.~~
    3. ~~Extension:~~
      - a. ~~Monitor: 457 mm (18 inches).~~
      - b. ~~Keyboard: Up to 990 mm (39 inches).~~
    4. ~~Weight Capacity:~~
      - a. ~~Display: Up to 8.2 kg (18 lbs.).~~
      - b. ~~Keyboard/Mouse/Bar Code Scanner: 2.3 kg (5 lbs.).~~
    5. ~~Fluid motion adjustment.~~
    6. ~~Tension: Mechanically adjustable.~~
    7. ~~Rotation:~~
      - a. ~~Arm: 3 point telescoping.~~
      - b. ~~Monitor: 360 degrees.~~
    8. ~~Tilt:~~
      - a. ~~Display: 30 degrees.~~
    9. ~~Keyboard/Mouse tray included.~~
    10. ~~Concealed cable management.~~
    11. ~~Mounting Pattern: VESA compliant: 75x75 to 100x100.~~
  - C. ~~Computer Mount:~~
    1. ~~Quantity: Two per post.~~
    2. ~~Construction: All steel mechanically fastened to post.~~
    3. ~~Color: White.~~
    4. ~~Includes fasteners to lock holder's width.~~
    5. ~~Capacity:~~
      - a. ~~Width: 50 - 200 mm (2 - 8 inches).~~
      - b. ~~Weight: 18 kg (40 lbs.).~~

2.10 M1803M1 MOUNT, CEILING, FP MONIT/KBD/CPU

- A. Configuration: Multi-component ceiling mounted post and bracket system.



1. One post.
  2. Two articulating arms with monitor mount and folding keyboard / mouse / barcode scanner.
  3. Two computer harness.
- B. Post:
1. Fixed, ceiling mounted.
  2. Steel construction.
  3. Integrated cable management.
  4. Dimensions:
    - a. Base: 400 x 350 mm (16 x 14 inches).
    - b. Post: 2030 x 75 x 75 mm (80 x 3 x 3 inches).
- C. Articulating Arm:
1. Aluminum alloy with plastic cover.
  2. Color: White.
  3. Extension:
    - a. Monitor: 457 mm (18 inches).
    - b. Keyboard: Up to 990 mm (39 inches).
  4. Weight Capacity:
    - a. Display: Up to 8.2 kg (18 lbs.).
    - b. Keyboard/Mouse/Bar Code Scanner: 2.3 kg (5 lbs.).
  5. Fluid motion adjustment.
  6. Tension: Mechanically adjustable.
  7. Rotation:
    - a. Arm: 3 point telescoping.
    - b. Monitor: 360 degrees.
  8. Tilt:
    - a. Display: 30 degrees.
  9. Keyboard/Mouse tray included.
  10. Concealed cable management.
  11. Mounting Pattern: VESA compliant: 75x75 to 100x100.
- D. Computer Mount:
1. Construction: All steel mechanically fastened to post.
  2. Color: White.
  3. Includes fasteners to lock holder's width.
  4. Capacity:
    - a. Width: 50 - 200 mm (2 - 8 inches)
    - b. Weight: 18 kg (40 lbs.)



**2.11 M2020 CABINET, STORAGE, SAFETY, BUILT-IN, VENTED**

- A. Lined acid and flammable liquid storage cabinet. To include:
1. Dimensions: approximately 1219 mm wide by 609 mm deep by 749 mm high (48 inches wide by 24 inches deep by 29.5 inches high). Field verify dimensions with adjacent casework.
  2. Double door cabinet with panel.
  3. Adjustable shelf.
  4. Venting option.

**2.12 S0395 LOADING CAR AND TRANSFER CARRIAGE, LARGE CHAMBER**

- A. For use with JSN S0530 Vertical Sterilizer. Loading car and transfer carriage for use with sterilizers. Loading car is a welded. Transfer rack is constructed of a welded CRS or painted for corrosion protection frame. Loading car is secured to the transfer carriage by a locking mechanism. For loading and unloading vertical sterilizers and for transferring goods to and from processing areas.

**2.13 S0530 STERILIZER, STM, VAC, 1DO, RCSD, 1WLL, 24X36X60 CHAMBER**

- A. Chamber:
1. Interior: Stainless steel.
  2. Chamber Sizes: Medium 660 mm x 953 mm (26 inches x 37.5 inches).
  3. Chamber Pressure: up to 310 kPa (45 PSIG).
  4. Chamber Temperature: 110 to 135 degrees C (230 to 275 degrees F).
- B. Doors:
1. Quantity: Single.
  2. Operation: Manual.
  3. Configuration: Hinged door.
- C. Standard Cycles: Vacuum.
- D. Heat Source: Steam.
- E. Loading: Manual.
- F. Recorder: Integrated Printer.
- G. Control Options: Integrated controls.
- H. Installation Options: Floor mount.
- I. Electrical Requirements: 480V.
- J. Non-Vented.

**2.14 S0960M WASHER/DISINFECTOR, STM, 2DO, RCSD1WLL, 26X24X24 CHAM**

- A. Cube Model:
1. Chamber Interior: Stainless steel.



2. Doors:
  - a. Quantity: Double (Pass-thru).
  - b. Operation: Automatic.
3. Loading: Automatic.
4. Controls: Microprocessor.
5. Heat Source: Steam.
6. Electrical Requirements: 480V.
7. Standard Cycles: Pre-Wash, Wash Enzyme, Wash Detergent, Rinse, Thermal Rinse, Drying.
8. Overall Size: 1066 mm wide x 787 mm long x 2032 mm high (42 inches wide x 31 inches long x 80 inches high).
9. Chamber Size: 673 mm wide x 666 mm long x 660 mm high (26.5 inches wide x 26.25 inches long x 26 inches high).
10. Non-Vented.

**2.15 S2635 CLEANER, ULTRASONIC, SNGL CHAMBER, CAB, F/S**

- A. Floor Model:
- B. Description: Designed to thoroughly clean surgical instruments and da Vinci accessories prior to disinfection and sterilization.
  1. Chamber:
    - a. Single Chamber.
    - b. Interior: Stainless steel.
    - c. Tank capacity: 64 liters (17 gallons).
    - d. Stainless Steel Construction.
  2. Doors:
    - a. Quantity: Single.
    - b. Operation: Automatic open.
  3. Loading: Manual.
  4. Touch Screen Control:
    - a. Open lid.
    - b. Select cycle.
    - c. Start, pause and monitor cycles.
  5. Seismic tie-down.
  6. 10 port flush kit with brackets.
  7. Intuitive Surgical da Vinci Instrument tray.
  8. Intuitive Surgical da Vinci flush kit replacement hoses.
  9. Heat Source: Electric.
  10. Electrical Requirements: 208V, single phase.



**2.16 S2640 CLEANER, ULTRASONIC, CONSOLE, DBL CHMBR, CAB, F/S**

- A. Floor Model:
  - 1. Chamber:
    - a. Double Chamber.
    - b. Interior: Stainless steel.
    - c. Tank capacity: 41.6 to 75.7 liters (11 to 20 gallons).
  - 2. Doors:
    - a. Quantity: Single.
    - b. Operation: Automatic.
  - 3. Loading: Manual.
  - 4. Heat Source: Electric.
  - 5. Temperature:
    - a. Solution Tank: 37 to 48 degrees C (100 to 120 degrees F).
  - 6. Electrical Requirements: 240V.

**2.17 S3185 WASHER, CART AND UTENSIL, 2 DO, PIT MNTD, RCSD 2 WLL**

- A. Interior: Stainless steel.
  - 1. Chamber Capacity: 3.8 to 6.82 cubic meters (134 to 241 cu.ft.).
- B. Doors:
  - 1. Quantity: Single (Pass-thru).
  - 2. Operation: Automatic.
- C. Controls: Microprocessor.
- D. Heat Source: Steam.
- E. Electrical Requirements: 480V.
- F. Standard Cycles: Wash, Thermal Disinfection Rinse, Dry.
- G. Installation Options: Pit mount.
- H. Temperature:
  - 1. Wash Cycle: 48.9 to 82.2 degrees C (120 to 180 degrees F).
  - 2. Rinse Cycle: 82.2 to 90 degrees C (180 to 194 degrees F).
- I. Loading: Manual.
- J. Non-Vented.

**2.18 S5500M AUTOMATIC ENDOSCOPE RE-PROCESSOR (AER)**

- A. Configuration: Free Standing.
- B. Chamber:
  - 1. Chamber Quantity: Double, Independent.
  - 2. Chamber Processing Capacity: 1 scope per Basin.
  - 3. Overall Size: 914 mm wide x 533 mm long x 1168 mm high (36 inches wide x 21 inches long x 46 inches high).



- C. Standard Cycle:
  - 1. Time: 30 minutes.
- D. Printer: Remote Printer.
- E. Water Pressure: 276 kPa (40 PSI).
- F. Electrical Requirements: 208V.
- G. Printer Electrical Requirements: 110V.
- H. Standard Cycles: Leak Test, Pre-Rinse, Wash, Rinse, Disinfect, Alcohol Rinse, Leak Test, Forced Air Dry.
- I. Heated Disinfectant Reservoirs.
- J. Air Compressor: Integral.
- K. Printer: Integral.
- L. Filters: Air, (3) Three stage Water, Disinfectant.

#### **2.19 S5500M1 STERILIZER/AERATOR, ETO GAS**

- A. Chamber:
  - 1. Interior: Anodized Aluminum.
  - 2. Size: 223 liters (7.9 cu.ft).
- B. Cycle Time:
  - 1. Exposure: 0 to 99 hours.
  - 2. Aeration: 0 to 99 hours.
  - 3. Chamber Pressure: 345-1034 kPa (50-150 psi).
  - 4. Warm Sterilization Temperature: 55 degrees C (131 degrees F).
  - 5. Cold Sterilization Temperature: 37 degrees C (98.6 degrees F).
  - 6. Warm Aeration Temperature: 54 degrees C (130 degrees F).
  - 7. Cold Aeration Temperature: 38 degrees C (100 degrees F).
- C. Doors:
  - 1. Quantity: Single.
  - 2. Operation: Manual.
- D. Recorder: Integrated Printer.
- E. Installation Options: Recessed.
- F. Electrical Requirements: 220V.
- G. Vent Outlet: Ethylene oxide vent pipe connection for vent pipe connection to abator.
- H. Sterilant Delivery System: Single-Use Gas cartridge.

#### **2.20 S5500M2 ULTRASOUND PROBE REPROCESSOR**

- A. Configuration: Free Standing.
- B. Chamber:
  - 1. Basin Quantity: Single.



2. Chamber Processing Capacity: 1 per Basin.
3. Overall Size: 94 mm wide x 94 m long x 133 mm high (13.6 inches wide x 13.6 inches long x 19.3 inches high).

C. Standard Cycle:

1. Time: 7 minutes.

D. Cycle Verification: Integral Screen.

E. System Electrical Requirements: 120V.

**2.21 S5500M3 ULTRASOUND PROBE DISINFECTOR**

A. Configuration: Wall Mounted.

B. Chamber:

1. Basin Quantity: Double.
2. Chamber Processing Capacity: 1 per Basin.
3. Overall Size: 610 mm wide x 203 mm long x 1118 mm high (24 inches wide x 8 inches long x 44 inches high).

C. Standard Cycle:

1. Time: 17 minutes.

D. Cycle Verification: Integral Screen.

E. Printer: Integral Printer.

F. System Electrical Requirements: 120V.

**2.22 U1000 ABATOR, ETHYLENE-OXIDE**

A. System Components:

1. Catalytic cell.
2. Heater.
3. Blower (Fan): 230V.
4. Prefilter.
5. Interconnection Kit: Links abator to ethylene-oxide sterilizer.
6. Construction: Stainless Steel.
7. Electrical Requirements: 220V.

B. Vent Accessories:

1. Inlet Vent: Ethylene oxide vent pipe connection for vent pipe connection to sterilizer.
2. Outlet Vent: Exhaust discharge connection. Provide 3-way blender exhaust discharge fitting with exhaust duct connection to mix high temperature abator discharge with room air for low temperature abator exhaust.
3. Auxiliary Vent: Ethylene oxide emergency vent pipe connection for vent pipe connection to outdoors.



## **2.23 U1002 PASS-THROUGH ASSEMBLY**

- A. Provide satin finished type 304 stainless steel 18 gauge, approximately 914 mm (36 inches) high by 914 mm (36 inches) wide by 914 mm (36 inches) deep specimen pass-through cabinet. Adjustable flange and trim shall be 53 mm (1 inch) wide and 6.5 mm (1/4-inch) square return to wall. Adjustable flange shall provide an installation range of 51 mm (2 inches) to 140 mm (5-1/2 inches). Doors shall be attached to edge of unit with full length stainless steel piano hinge and closed with spring tensioned interlocking mechanism to prevent both doors from simultaneous opening; 6.5 mm (1/4-inch) clear acrylic window. Removable stainless steel drip tray shall be provided at bottom of cabinet.

## **PART 3 - EXECUTION**

### **3.1 INSTALLATION**

- A. Install sterilizers according to manufacturer's written instructions.
- B. Coordinate installation with related mechanical and electrical work. Provide cutouts and openings for plumbing and electrical work as indicated or as required by trades involved.

### **3.2 TESTS**

- A. Field test installed equipment after water and steam systems are pressurized for proper operation.
1. Operate each unit for six hours through repeated full cycles. During and after testing, there shall be no evidence of leaks, overheating, electrical failure, or other symptoms of failure.
  2. For units that fail testing, make adjustments and corrections to installation, or replace equipment, and repeat tests until equipment complies with requirements.

### **3.3 PROTECTING AND CLEANING**

- A. Protect equipment from dirt, water, and chemical or mechanical injury during the remainder of the construction period.
- B. At the completion of work, clean equipment as required to produce ready-for-use condition.

### **3.4 INSTRUCTIONS**

- A. Instruct personnel and transmit operating instructions in accordance with requirements in specification Section 01 00 00, GENERAL REQUIREMENTS.



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B. Training must be provided by the manufacturer or installer.

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